

IN THE CLAIMS

Claims 1-27 are presented below:

Claims 1-13. (Canceled)

Claim 14. (Original) A coating film forming apparatus for forming a coating film by applying a coating solution to a substrate comprising:

a cassette mounting section on which a substrate cassette housing a plurality of substrates is mounted;

a coating unit for applying the coating solution to the substrate taken out of the substrate cassette which is mounted on said cassette mounting section;

plural treatment units for performing at least either pre-treatment or post-treatment for treatment of applying the coating solution;

a reduced-pressure drying unit for drying under a reduced-pressure atmosphere the substrate which is applied with the coating solution in said coating unit, provided as one of said plural treatment units; and

a main transfer mechanism for transferring the substrate between said coating unit and said treatment units,

wherein said coating unit has a substrate holding portion for holding the substrate, a coating solution nozzle for discharging the coating solution to the substrate, provided to be opposed to the substrate held by the substrate holding portion, and a drive mechanism for moving the coating solution nozzle relatively to the substrate along a surface thereof while discharging the coating solution to the surface of the substrate from the coating solution nozzle, and said main transfer mechanism has a holding member for holding the substrate and atmosphere forming means for making an atmosphere in which the substrate is held by the holding member an atmosphere in which vaporization of solvent is inhibited.

Claim 15. (Original) The apparatus according to claim 14,
wherein the atmosphere forming means is means for supplying solvent vapor.

Claim 16. (Original) The apparatus according to claim 14,
wherein the atmosphere forming means is means for making the atmosphere at least
either an atmosphere at a predetermined temperature or an atmosphere at a predetermined
humidity.

Claim 17. (Original) The apparatus according to claim 14,
wherein said main transfer mechanism has washing means for washing the holding
member.

Claim 18. (Original) The apparatus according to claim 17,
wherein said washing means has means for supplying a washing solution to the
holding member and means for supplying gas for drying to the holding member.

Claim 19. (Original) The apparatus according to claim 14,
wherein said main transfer mechanism has detecting means for detecting a stain of the
holding member.

Claim 20. (Original) The apparatus according to claim 14,
wherein said main transfer mechanism has a cover body for surrounding a
circumference of the substrate held by the holding member.

Claim 21. (Original) The apparatus according to claim 14,
further comprising a coating film removing unit for removing the coating film at a

peripheral portion of the substrate which is dried under reduced pressure in said reduced-pressure drying unit, provided as one of said plural treatment units.

Claim 22. (Original) The apparatus according to claim 14,
wherein application is performed while the coating solution is discharged in a line shape having a fine diameter from the coating solution nozzle.

Claim 23. (Original) The apparatus according to claim 14,
further comprising a mask for covering portions except for a region of coating film formation on the substrate and receiving the coating solution from the coating solution nozzle.

Claim 24. (Original) A coating unit for forming a coating film on a substrate by supplying a coating solution to the substrate from coating solution discharge means comprising:

a container for housing the substrate therein;

solvent-atmosphere generating means for supplying solvent vapor of the coating solution to the inside of said container to generate a solvent atmosphere at a predetermined concentration inside said container;

intake means for sucking the atmosphere inside said container;

a sensor for detecting a concentration of the solvent atmosphere inside said container;

and

control means for controlling operation of said solvent-atmosphere generating means and operation of said intake means based on the concentration detected by said sensor.

Claim 25. (Original) The coating unit according to claim 24,
wherein said solvent-atmosphere generating means has a tank for storing the solvent
therein and a heating mechanism for heating the solvent in the tank, and heating by the
heating mechanism is controlled by said control means.

Claim 26. (Original) The coating unit according to claim 24,
further comprising a cover for opening and closing a carrier inlet/outlet of said
container, the cover being formed with a slit through which said coating solution supply
means is movable, an intake port being arranged in the vicinity of the slit.

Claim 27. (Original) The coating unit according to claim 24,
wherein said intake means has an intake port formed on said container.